Application No. 09/751747 (Docket: MIPS.0105-00-US)
37 CFR 1.111 Amendment dated 09/23/2005
Reply to Office Action of 03/24/2005

REMARKS/ARGUMENTS

In the Office Action, the Examiner noted that claims 1-23 are pending in the application. The Examiner additionally stated that claims 1-23 are rejected. By this amendment, claims 1, 10, 14-21, and 22 have been amended. Hence, claims 1-23 are pending in the application.

Applicant hereby requests further examination and reconsideration of the application, in view of the foregoing amendments.

In the Specification

Applicant has amended the specification to secure a substantial correspondence between the claims amended herein and the remainder of the specification. No new matter is presented.

In the Claims

Rejections Under 35 U.S.C. §112

The Examiner rejected claims 1-21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner noted that claim 1 recites the limitation "said order" in line 16 and that there is insufficient antecedent basis for this limitation in the claim. The Examiner stated that it is unclear which of the plurality of orders is being referred to. The examiner took the claim to mean "said data order" based on the specification.

By this paper, Applicant has amended independent claims 1, 10, and 14 to clearly indicate "said data order," as the Examiner has taken to meaning based on the specification. Accordingly, it is requested that the rejections of claims 1-21 be withdrawn.

Rejections Under 35 U.S.C. §101

The Examiner rejected claims 10-21 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant respectfully traverses the Examiner's rejections.

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The Examiner noted that 10-21 attempt to claim computer data signals and that computer data signals are not patentable because they do not fall within one of the statutory classes of subject matter allowed by 35 USC 5 101. The Examiner stated that claim 10 recites the use of a computer usable medium and that page 60 of the specification gives examples of a computer usable medium and a computer usable transmission medium. The Examiner inferred that the term "computer usable medium" encompasses the term "computer usable transmission medium", which is shown in the examples to embody such things as a carrier wave and a computer data signal.

Applicant respectfully disagrees with the Examiner's characterization of the teachings of the specification and provides the following points with regard to the recitation of "computer usable medium" in claim 10. The specification states that "[t]he program code can be disposed in any known computer usable medium including semiconductor memory, magnetic disk, optical disc (e.g., CD-ROM, DVD-ROM, etc.) and as a computer data signal embodied in a computer usable (e.g., readable) transmission medium (e.g., carrier wave or any other medium including digital, optical or analog-based medium)." Clearly, the specification teaches that the program code can be disposed in two ways: The first way is to dispose the program code in any known computer usable medium, which includes the medium examples of semiconductor memory, magnetic disk, etc. The second way is to dispose the program code as a computer data signal embodied in a computer usable (e.g., readable) transmission medium. Consequently, claim 10 recites a computer usable medium (i.e., the first way of disposing the program code), which is clearly statutory subject matter.

In view of the above points, Applicant respectfully requests that the rejection of claim 10 be withdrawn.

Claims 11-13 depend from claim 10 and add further limitations beyond that which has been argued as statutory subject matter. Accordingly, it is respectfully requested that the rejections of claims 11-13 be withdrawn as well.

Claim 14, as amended herein, is provided below for ease of reference.

14.   An apparatus for transmitting program code, comprising:

> a communication network having a transmission medium, for embodying a
> computer data signal therein, the computer data signal comprising:
>
> > computer-readable first program code, for providing an instruction bus for
> > transferring instructions to a plurality of coprocessors in an
> > instruction transfer order, wherein particular instructions direct a
> > particular coprocessor to transfer data to/from a CPU; and
> >
> > computer-readable second program code, for providing a data bus for
> > transferring said data, wherein data order signals within said data
> > bus specify a data transfer order that differs from said instruction
> > transfer order, and wherein said data order signals specify transfer
> > of a data element, said data element corresponding to a specific
> > outstanding instruction, wherein said data order is relative to
> > outstanding instructions, said outstanding instructions being those
> > of said particular instructions transferred to said particular
> > coprocessor that have not completed a data transfer;
> >
> > wherein said data order signals indicate said data order, and wherein said
> > data order signals are provided with said data element as said data
> > element is transferred.

In the rejection of claim 14, the Examiner noted that a computer data signal embodied on a transmission medium is explicitly claimed. In response, Applicant has amended claim 14 to recite, among other elements and limitations, "an apparatus for transmitting program code. The apparatus includes a communication network having a transmission medium, for embodying a computer data signal therein." One skilled in the art will appreciate that a communication network that includes a transmission medium is clearly statutory subject matter and, consequently, it is requested that the rejection of claim 14 be withdrawn.

Claims 15-21 depend from claim 14 and add further limitations beyond that which has been argued as statutory subject matter. Accordingly, it is respectfully requested that the rejections of claims 15-21 be withdrawn as well.

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Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 1-8 and 22 under 35 U.S.C. 103(a) as being unpatentable over Moyer (5,983,338) in view of Strongin (6,559,850 Bl). Applicant respectfully traverses the rejections.

With regard to claim 1, the Examiner noted that:

a. Moyer has disclosed an interface (figure 1, element 30) for transferring data between a central processing unit (CPU) (figure 1, element 12) and a plurality of coprocessors (figure 1, elements 14 and 16), the interface comprising:

i. an instruction bus (column 6, line 34 and figures 2 and 3, element 61), configured to transfer instructions to the plurality of coprocessors in an instruction transfer order (an order is inherent), wherein particular instructions direct one of the plurality of coprocessors to transfer the data to/from the CPU (figures 22-26, UU field); and

ii. a data bus (column 8, lines 65-66 and figures 2 and 3, element 72), coupled to said instruction bus (since both go from processor to coprocessor, they are coupled), configured to transfer the data.

b. Moyer does not disclose wherein data order signals within said data bus specify a data transfer order that differs from said instruction transfer order, and wherein said data order signals specify transfer of a data element corresponding to a specific outstanding instruction that is relative in order to all outstanding instructions, said outstanding instructions being those of said particular instructions transferred to said one of the plurality of coprocessors that have not completed a data transfer; wherein the interface keeps track of an order of said outstanding instructions, and wherein said data order signals indicate said order, and wherein said data order signals are provided with said data element as said data element is transferred.

c. Strongin has disclosed in figures 3 and 4 a read retrieval order that differs from the read request order. An instruction as in Moyer is essentially a request for data or a read request. When the data is sent, that is a read retrieval. The figure shows

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signals (identifier) that indicate the order of the data. Figure 6 of Strongin shows that the identifiers or data order signals sent back with the data give an order as called for by the claims and show that any of a specific outstanding instruction is relative in order (which is inherent) to all the outstanding instructions.

d. Strongin has shown in column 6, lines 36-44 that this difference in ordering allows for data accesses to be quicker. This quickness of data access would have motivated one of ordinary skill in the art to modify the design of Moyer to include the out of order data retrieval disclosed by Strongin. With this modification in place, the data order signals would specify transfer of a data element corresponding to a specific outstanding instruction that is relative in order to all outstanding instructions. Since the disclosure of Moyer is dealing with the transfer of data between a processor and coprocessors, the data is inherently associated with outstanding instructions and further it is inherent that the instruction is relative to all other instructions in some manner. This relation could simply be instruction order, which would then mean that the outstanding instruction is relative to the other instructions in that some are before it and some after in .program order.

Based on the above points, the Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the .design of Moyer to retrieve data out of order as taught by Strongin so that data accesses can be achieved quicker.

Applicant is perplexed with the above points made by the Examiner, specifically with regard to the points made in item "c" above. This is because the language "relative in order to all outstanding instructions" was agreed to by the Examiner in Interview on 01/12/2005 with the undersigned and inventor Jones, as reflected in the Interview Summary in the file wrapper. However, notwithstanding the above, in the instant office action under the heading "Response to Arguments," the Examiner stated that "Applicant has argued with regard to the independent claims that Strongin's transaction IDs do not indicate a transfer that is relative in order to all outstanding instructions, but gives an

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absolute order upon transfer of the data that indicates the ordering of transactions per previously issued requests. The Examiner additionally pointed out that the above argument is not what is claimed and that the claims specify transfer of a data element corresponding to a specific outstanding *instruction* that is relative in order to all outstanding instructions, not that the *order* is relative to the outstanding instructions.

In response, Applicant asserts that the clause "relative in order" addresses the transfer order relative to outstanding instructions, however, since such language has been misconstrued by the Examiner, Applicant has amended the language of independent claims 1, 10, and 14 as suggested in the Office Action by the Examiner to read as follows:

"wherein said data order signals specify transfer of a data element, said data element corresponding to a specific outstanding instruction, wherein said data order is relative to outstanding instructions, said outstanding instructions being those of said particular instructions transferred to said one of said plurality of coprocessors that have not completed a data transfer."

Claim 22 contains substantially the same limitation language.

The language above clearly denotes that said data order is relative to outstanding instructions, as opposed to a specific outstanding instruction being relative to outstanding instructions.

Accordingly, it is requested that the rejections of claims 1 and 22 be withdrawn.

With respect to claims 2-8, these claims depend from claim 1 and add further limitations that are neither anticipated nor made obvious by Moyer, Strongin, or Moyer and Strongin in combination. Accordingly, Applicant respectfully requests that the Examiner withdraw his rejections to claims 2-8.

The Examiner rejected claims 9 and 23 under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Strongin as applied to claims 1-8 and 22 above, and further in view of Hennessy. Applicant respectfully traverses and notes that claims 9 and 23 depend from claims 1 and 22, respectively, and add further limitations over that subject

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matter which has been argued above as being allowable over the noted references. Accordingly, it is requested that the rejections of claims 9 and 23 be withdrawn.

The Examiner rejected claims 10-12 and 14-20 under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Tanenbaum and further in view of Strongin. Applicant respectfully traverses in view of the amendments herein to claims 10 and 14, noting that it has been shown herein that none of the references teach or suggest "wherein said data order signals specify transfer of a data element, said data element corresponding to a specific outstanding instruction, wherein said data order is relative to outstanding instructions, said outstanding instructions being those of said particular instructions transferred to said one of said plurality of coprocessors that have not completed a data transfer." Accordingly, Applicant requests that the rejection of claims 10 and 14 be withdrawn.

With respect to claims 11-12 and 15-20, these claims depend from claims 10 and 14, respectively, and add further limitations that are neither anticipated nor made obvious by Moyer, Strongin, Tanenbaum, or any combination of Moyer, Strongin, and Tanenbaum. Accordingly, Applicant respectfully requests that the Examiner withdraw his rejections to claims 11-12 and 15-20.

The Examiner furthermore rejected claims 13 and 21 under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Tanenbaum and further in view of Strongin as applied to claims 10-1 2 above, and further in view of Hennessy. Applicant respectfully traverses in view of the amendments herein to claims 10 and 14, noting that it has been shown herein that none of the references teach or suggest "wherein said data order signals specify transfer of a data element, said data element corresponding to a specific outstanding instruction, wherein said data order is relative to outstanding instructions, said outstanding instructions being those of said particular instructions transferred to said one of said plurality of coprocessors that have not completed a data transfer." Accordingly, Applicant requests that the rejections of claims 13 and 21 be withdrawn.

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CONCLUSIONS

In view of the arguments advanced above, Applicant respectfully submits that claims 1-23 are in condition for allowance. Reconsideration of the rejections is requested, and allowance of the claims is solicited.

Applicant earnestly requests that the Examiner contact the undersigned practitioner by telephone if the Examiner has any questions or suggestions concerning this amendment, the application, or allowance of any claims thereof.

I hereby certify under 37 CFR 1.8 that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on the date of signature shown below.

Respectfully submitted,
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09 / 23 / 2005

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